

VIII. Notes on the Rutelid genera *Anomala*, *Mimela*, *Popillia*, and *Strigoderma*. By GILBERT J. ARROW, F.E.S.

[Read April 5th, 1899.]

ACCORDING to the type specimen now in the British Museum, *Anomala pallida*, F. is the species known as *A. ypsilon*, Wied. Beside this specimen an example of Olivier's *A. varians* appears to have been placed at a time subsequent to the original description of *A. pallida* in the *Systema Entomologica*, and this seems to have been taken by Fabricius in mistake for his type when writing his *Systema Eleutheratorum*, in which he quoted his previous description, but referred to the original specimen as *var. minor*. This confusion has hitherto escaped notice, and Burmeister, following the later description, regarded the larger specimen as the true *A. pallida* without observing its identity with Olivier's insect. Both species are Asiatic, the localities given by all the authors mentioned being wholly wrong.

*A. humeralis*, Walker, which is very closely related to the preceding insect, must be called *A. walkeri*, as the name *humeralis* is preoccupied. It is larger and more convex than *A. pallida*, and has the puncturation more homogeneous and the head entirely dark.

The Rev. T. Blackburn has described an *Anomala* from Australia as *A. australasiæ*, but examination of specimens from Queensland and South Australia shows it to be the common and very widespread species *antiqua*, Gyll., first described from China, and of which there are also specimens in the British Museum from India, Burma, Siam, the Malay Peninsula, Borneo, and Java. Mr. Blackburn remarks in connection with this that another *Anomala*, *A. fuscoviridis*, has been described from Australia. This, however, is a mistake which has arisen through a slip in Blanchard's *Catalogue de la Collection Entomologique du Muséum de Paris*, in which "Nouv. Hollande" occurs instead of "Nouv. Guinée." I believe this species will probably prove to be the same as *A. assimilis*, Boisd., the figure being imaginary and misleading. *A. antiqua*, Gyll., is therefore in all probability the only beetle of this genus occurring in Australia, and this

has no doubt been carried there at some period more or less recent.

The types of *Anomala* (*Euchlora*) *femoralis* and *perplexa*, Hope, in the British Museum show the two species to be identical. Both names are therefore synonyms of *bicolor*, Fab., with which the catalogue already shows *A. femoralis* as synonymous.

*A. tingitana*, Blanch. from Algeria is the European species *profuga*, Erichs., which thus ranges, like so many other S. European insects, on both sides of the Mediterranean. Blanchard's specimens, as well as all I have seen from the southern shore of the Mediterranean, belong to the black variety (*A. errans*, var. 5, Illig.). It will be remarkable if this proves to be the only form represented there.

Three species of *Anomala* have been given the same name of *variegata*, of which that described by Hope from Nepal has priority. The second is a Brazilian insect described by Latreille, and wrongly regarded by Burmeister as the same as the North and Central American *A. undulata*. This insect may be called *A. brasiliensis*. *Mimela variegata* of Walker also belongs to this genus, although it is the species which has recently been made the type of a new genus by Dr. Kraatz under the name of *Pæcilsticta princeps*. Dr. Kraatz has regarded it as most nearly allied to *Popillia*, but he is evidently not acquainted with the species of *Anomala* with a produced mesosternum forming the section *Spilota*, to which all the characters mentioned by him refer it. The form of the tip of the front tibia mentioned and figured by Dr. Kraatz as a generic character is distinctive of the females of these insects. Walker's name being inadmissible, this species should be called *Anomala* (*Spilota*) *princeps*, Kraatz.

Dr. Kraatz has formed another new genus (*Hadropopillia*) for *Popillia regina* (not "*reginæ*"), of Newman, which also belongs to the subgenus *Spilota*, and is very closely related to *Anomala strigata*, Lap. Newman's name has been sunk in favour of Guérin's *splendida*, dating from 1840, but as the original description of Newman's *regina*, as of his numerous other species of *Popillia*, was in the "Magazine of Natural History" of 1838 (vol. ii, p. 336) this must be revived as the correct name. This paper was overlooked by the cataloguers, although it preceded by three years that to which they have given the references.

Another close ally of this insect was also described by Newman as a *Popillia* under the name of *P. varia*. It has since been named *Spilota popiliopsis* by Candèze, but must be called *Anomala (Spilota) varia*, Newm.

*A. microcephala*, Burm., is synonymous with *A. sulcipennis*, Lap., and two related species described by Bates from Costa Rica in the *Biologia Centrali-Americana* are old species. His *A. costarica* is the same as *A. testaceipennis*, Blanch., described from Bolivia, and *A. varpatteni* is *A. marginata*, Fab. Bates was in both cases misled by the localities of his insects, which will no doubt ultimately prove to have a wide range. That of *A. marginata*, as at present known, is very peculiar. The British Museum collection contains specimens from Canada. Dr. Horn mentions it as belonging to the Southern States, and in Central America it has apparently only been found in Costa Rica. As it is very abundant where it is found, these apparent gaps in its habitat are remarkable.

Burmeister's *Phyllopertha 8-costata*, a Japanese insect which from the similarity of the names has been confused with Hope's *Anomala costata*, seems, as well as the latter, to be most fitly placed in the genus *Anomala*. It is a very closely related form to *A. sieversi*, Heyden, from Corea. Another Japanese species, *Anomala pubicollis*, Waterh., on the contrary has its nearest allies in *Phyllopertha*, and should be transferred to that genus.

In the genus *Mimela*, the types of *similis* and *bicolor* of Hope belong to the same species; *hopei*, Burm., is the same as *heterochropus*, Blanch.; and *chryseis*, Bates, is *testaceoviridis*, Blanch. *Mimela gaschkevitchi*, Motsch., is *M. lathamii*, Hope. Hope mentions Singapore as a locality for this insect, but this is almost certainly due to a mistake, as it appears to be restricted to the northern part of China, Corea, and Japan. A variety occurring in the last is wholly crimson in colour, and there are also specimens entirely black.

Three allied species of *Mimela* have been the subjects of much confusion. *M. leei*, Swed., *M. fulgidivittata*, Bl., and *M. horsfieldi*, Hope, are insects of similar appearance, characterised by rainbow-like bands of red, gold and blue. In the Munich catalogue there is a species, *M. vittata*, Redt., of which *fulgidivittata* stands as a synonym, while *sapphirina*, Parry, occurs as the name of a variety of it. The three names thus brought together really belong to

the three species named above. Parry's insect, which is from Assam (and not Kashmir as stated in the catalogue), is a blue variety of the Assamese *M. leei*, which is easily distinguishable by the coarse puncturation and deep blue sutural margins of the elytra; and Redtenbacher's species, which was described from Kashmir, is the same as *M. horsfieldi* of Hope, recognisable by its smaller size, less punctured elytra and the golden colour of the hind femora. There is a variety of *M. fulgidivittata*, in which the green ground colour is replaced by a reddish-bronze over the entire surface, and the bands are a purplish black.

Three names have been given to a species of *Popillia* inhabiting the Philippine Islands. The types of *P. scalpta* and *æmula*, Newman, are the same, and *picticollis*, Kraatz, also belongs to this species, Dr. Kraatz having been misled by Newman's very faulty descriptions. *P. æmula* was described from a specimen from which the hairs on the disc of the thorax had been rubbed off, and in *P. scalpta* the author, by a strange omission, made no reference to this most prominent characteristic.

*Strigoderma fulgicollis* and *insignis*, described and figured by de Brême, are merely two of the colour varieties of *S. sulcipennis*, Burm. The volume in which these were described bears the same date as Burmeister's (1844), but the paper was not published until the following year.

The descriptions of *S. colombica*, Burm., and *S. cupreiceps*, Blanch., are virtually the same, and I have no doubt of the identity of the types.

*S. nigripennis*, Bates, to which a name was given by Bates on account of its darker coloration than *orbicularis*, Burm., is clearly only a variety of the latter, although very distinct. The absence of all structural difference and the fact that the great majority of the specimens occur in one collection from the same place (Cordova) will not permit it to be regarded as another species, and the apparent absence of individuals intermediate in colour is by no means unique.

#### SYNONYMICAL LIST.

- Anomala pallida*, F., Syst. Ent., p. 35 = *A. pallida*, var.,  
Syst. El., p. 168 = *A. ypsilon*, Wied.  
*A. varians*, Oliv. = *A. pallida*, Burm.  
*A. walkeri*, n.n. = *A. humeralis*, Walker.

- A. antiqua*, Gyll. = *A. australasiæ*, Blackb., Proc. Linn. Soc., N. S. Wales, 2nd ser., vii, p. 113.
- A. bicolor*, F. = *A. perplexa*, Hope.
- A. profuga*, Erichs. = *A. tingitana*, Blanch.
- A. brasiliensis*, n.n. = *A. variegata*, Latr.
- A. sulcipennis*, Lap. = *A. microcephala*, Burm.
- A. marginata*, F. = *A. vanpatteni*, Bates, Biol. Cent. Amer., II, pt. 2, p. 241.
- A. testaceipennis*, Blanch. = *A. costariæ*, Bates, Biol. Cent. Amer., II, pt. 2, p. 235.
- A. (Spilota) princeps*, Kr. = *Mimela variegata*, Walk. = *Pecilosticta princeps*, Kraatz, Deut. Ent. Zeit., 1892, p. 291.
- A. (Spilota) varia*, Newm. = *Popillia varia*, Newm. = *Spilota popiliopsis*, Cand.
- A. (Spilota) regina*, Newm. = *Popillia regina*, Newm. = *Hadropopillia splendida*, Guér., Kraatz, Deut. Ent. Zeit., 1892, p. 291.
- A. cinnabarina*, Fairm., Ann. Soc. Ent. Belg., 1887, p. 113 = *Popillia cinnabarina*, Fairm., Ann. Soc. Ent. Belg., 1887, p. 113 = *Ischnopopillia exarata*, Fairm., Kraatz, l.c., p. 293.
- A. fairmairei*, n.n. = *Anomala cinnabarina*, Fairm., Ann. Soc. Ent. Belg., 1893, p. 308.
- A. lateralis*, Hope = *Popillia rugicollis*, Newm.
- A. 8-costata*, Burm. = *Phyllopertha 8-costata*, Burm., nec *Anomala costata*, Hope.
- Phyllopertha pubicollis*, Waterh. = *Anomala pubicollis*, Waterh., Trans. Ent. Soc. Lond., 1875, p. 111.
- Adoretosoma tenuclimbatum*, Fairm. = *Phyllopertha tenuclimbata*, Fairm., Ann. Soc. Ent. Fr., 1889, p. 24, nec *P. tenuclimbata*, Fairm., C. R. Soc. Ent. Belg., 1891, p. cciii.
- A. virgulatum*, Fairm. = *Phyllopertha virgulata*, Fairm., Ann. Soc. Ent. Fr., 1889, p. 24.
- A. chromaticum*, Fairm. = *Phyllopertha chromatica*, Fairm., Ann. Soc. Ent. Fr., 1886, p. 327.
- Mimela lathamii*, Hope = *M. gaschkevitchi*, Motsch.
- M. leei*, Swed. = (var.) *sapphirina*, Parry.
- M. horsfieldi*, Hope = *M. vittata*, Redt., nec *M. fulgidi-vittata*, Bl.
- M. heterochropus*, Blanch. = *M. hopei*, Burm.
- M. bicolor*, Hope = *M. similis*, Hope.
- M. testaceoviridis*, Blanch. = *M. chryscis*, Bates.

*Popillia scalpta*, Newm. = *P. æmula*, Newm. = *P. picticollis*, Kraatz, Deut. Ent. Zeit., 1892, p. 284.

*P. flavotrabeata*, Thoms. = *P. lacertosa*, Cand.

*Strigoderma sulcipennis*, Burm. = *S. fulgicollis* and *insignis*, de Brême.

*S. colombica*, Burm. = *S. cupreiceps*, Blanch.

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